Submission of 2003 and 2004 U.S. Fishery Statistics For the Western and Central Pacific Ocean To the Secretariat of the Pacific Community In Support of the Western and Central Pacific Fisheries Commission[1]

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The National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (Fisheries), Pacific Islands Fisheries Science Center (PIFSC) has voluntarily provided U.S. fishery statistics to the Secretariat of the Pacific Community, Oceanic Fisheries Programme (SPC/OFP) for a number of years. This was done in support of fisheries research, particularly stock assessment, conducted collaboratively by high seas fishing nations and entities, Pacific island states, and the OFP staff for presentation and review at the SPC/OFP sponsored Standing Committee on Tuna and Billfish. This year the SPC/OFP requested that such data be provided under the expectation the newly formed Western and Central Pacific Fisheries Commission (WCPFC) would soon contract SPC/OFP to manage the Commission's fishery database and provide scientific advice to the WCPFC and its Scientific Committee.

Three categories of fishery data are provided:

> Category I -- annual catch estimates by fishing fleets (high seas troll, longline, pole-and-line, purse seine, and small scale troll and handline),
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> Category II -- aggregated catch and effort (logbook) data for longline and high seas troll, and
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> Category III -- size composition data for key species and fisheries.

The catch and effort data for longline fishing were aggregated by 5º longitude x 5º latitude x month strata within year and those for high seas troll fishing by 1º longitude x 1º latitude x month strata within year, according to the international standard for these fisheries.

The methods used in compiling the three categories of fishery statistics and other specifics are described below. The definition used for the western and central Pacific Ocean (WCPO) in compiling these statistics was taken from the Convention of the WCPFC: "all waters of the Pacific Ocean bounded to the south and to the east by a line drawn from the south coast of Australia due south along the 141° meridian of east

[1] PIFSC Data Report DR-05-004
Issued 2 August 2005

longitude to its intersection with the 55° parallel of south latitude; thence due east along the 55° parallel of south latitude to its intersection with the 150° meridian of east longitude; thence due south along the 150° meridian of east longitude to its intersection with the 60° parallel of south latitude; thence due east along the 60° parallel of south latitude to its intersection with the 130° meridian of west longitude; thence due north along the 130° meridian of west longitude to its intersection with the 4° parallel of south latitude; thence due west along the 4° parallel of south latitude to its intersection with the 150° meridian of west longitude; thence due north along the 150° meridian of west longitude". All statistics were compiled by year the catch was landed (2003 and 2004) regardless of the year the gear was set.

These statistics were prepared by Russell Ito, Frederick Dowdell, Craig Graham, and Penglong Tao in the Fishery Monitoring and Economics Division and Karen Sender in the Information Technology Services at the PIFSC. Contributions were also provided by Al Coan and John Childers, Southwest Fisheries Science Center.

Category I: Annual Catch Statistics

The estimates of annual catches were compiled from a number of sources: 1) American Samoa Department of Marine and Wildlife Resources offshore creel survey; 2) Guam Division of Aquatic and Wildlife Resources offshore creel survey and commercial landings data; 3) Hawaii Division of Aquatic Resources (HDAR) Commercial Marine Dealer data and federal longline logbook data (for Hawaii-based boats); 4) State of California logbook data, federal High Seas Compliance Act data, and even some Hawaii logbook data submitted in California (for California-based longline boats); and 5) Northern Mariana Islands Division of Fish and Wildlife Commercial Purchase data. Therefore, the U.S. annual catch statistics are a mixture of catches (American Samoa and Guam) and landings (Hawaii and Northern Mariana Islands).

For Hawaii, the larger of the estimated annual weights of each species from the market and logbook data sets were taken as the final estimates of landed weight. In using the dealer data, landed weights by species were compiled by combining the sold and unsold categories. The HDAR has recently improved the coverage and quality of the market data. Thus, we believe these data represent nearly a complete coverage. Landed fish are weighed to the nearest half pound, and these weights were summed and then converted to metric tons. For the combined logbook data, reported catches in numbers of fish, by species, were summed for those sets with begin set location occurring in the WCPO. Begin set location was used because it is the only location data field that is available for the entire Hawaii logbook time series and because it is the most common location used in the other logbook data sets. These summed catch in numbers were then converted to weights using average weights computed from the Commercial Dealer data for those vessel-trips with all sets exclusively in the WCPO (using all location data, i.e., begin and end set as well as begin and end haul, when available).

The logbook estimates are generally the larger of the two estimates of landings because logbooks include catches that are kept but may not reach the market. However,

the logbook estimates do not include recorded discards, because a procedure for estimating the average weight of discarded fish has not been developed. For some species, particularly marlins that are often misidentified in the logbook data, the Commercial Market estimates are larger than logbook estimates. Also, recreational catches are not included in the total annual estimates for Hawaii or the Northern Mariana Islands but are included for American Samoa and Guam where such data are collected by survey.

Category II: Catch and Effort (Logbook) Statistics

Four longline data sets were used, all with catches in number of fish by species, effort in sets and hooks, and location. United Nations Food and Agriculture 3-alpha species codes are used to identify species, except for the combined reporting of oilfish (*Ruvettus pretiosus)* and escolar (*Lepidocybium flavobrunneum*) for which we use OILF. The largest data set derives from the mandatory submission of the NOAA Fisheries Service Western Pacific Longline Fishing Log by Hawaii-based fishers. A rigorous quality control process is followed, including a quick review conducted with the provider when the logs are picked up from the vessels, later a visual inspection of the logs, and finally a computer-based error checking algorithm. The second largest data set derives from a similar program for American Samoa-based vessel. These data are collected by the American Samoa Department of Marine and Wildlife Resources for the NOAA Fisheries Service. These two data sets are provided for landing years 2003 and 2004. A third data set is derived from the mandatory submission of High Seas Fisheries Compliance Act logbooks by West Coast (mostly California)-based longline vessel operators. A fourth data set consists of a few Western Pacific logbooks submitted by operators of boats that departed Hawaii but landed on the West Coast. The latter two data sets are provided only for landing year 2003. The involved logbooks were visually inspected in Hawaii and some computer-based error checking was done.

All four data sets were merged into a single logbook data set. These combined logbook data, therefore, represent the entire operations of the American Samoa, California and Hawaii-based fleets, not just the operations taking place in the WCPO. While only those fishing trip records with landing year 2003 or 2004 were selected for compilation, as mentioned above, the data were aggregated by the begin set year and month. In addition, the data were aggregated by so-called 5x5 blocks of longitude and latitude. For example, one such block would be from -180º to < -175º W longitude and 0º to < 5º N latitude. Southern latitudes are negative. Thus, the data within each of the three data sets were aggregated by, in the vernacular, 5x5xMon, within begin set year. The four data sets were then merged into a single data set.

In order to meet the data confidentiality requirements in NOAA Administrative Order 216-100, a 3-boat filter was applied to each 5x5xMon block of data, i.e., those blocks with fewer than 3 boats fishing were dropped from the data.

Category III: Size Composition Statistics

Size frequency statistics for Hawaii landings (weight to the nearest half pound converted to kilograms) were compiled from the State of Hawaii Division of Aquatic Resources (HDAR) Commercial Marine Dealer data from vessel-trips with landing year 2004. This was done by selecting only those vessel-trips which had been identified using the Hawaii logbook data as having fished exclusively in the WCPO by using the locations at start of set, end of set, start of haul, and end of haul. Weight intervals vary from 1 kg to 5 kg depending on the size range of each species. Size frequency statistics were compiled for albacore, bigeye tuna, yellowfin tuna, skipjack, swordfish, blue marlin, and striped marlin. While the PIFSC has collaborated with HDAR in improving the dealer reporting system, PIFSC has no control over the quality of these data. Size frequency statistics were also compiled for American Samoa. While some size frequency data are available for Guam and the Northern Mariana Islands, the sample sizes are small.

Names of Data Files Provided

Category I:	Annual Catches	2003Landings.xls 2004Landings.xls
Category II:	Logbook:	US_joined_5x5xmo_03&04.xls US_joined_ImpactRule3.xls
Category III:	Size Composition:	AS LL SIZFRQ 03.xls AS LL SIZFRQ 04.xls AS TR SIZFRQ 03.xls AS TR SIZFRQ 04.xls HI TR SIZFRQ 03.xls HI TR SIZFRQ 04.xls HI LL SIZFRQ 03.xls HI LL SIZFRQ 04.xls